

REMARKS

Claims 21-44 are pending in the application. Claims 21-23, 25-27, 29-34 and 38 were rejected under 35 U.S.C. § 103(a) based on a combination of U.S. Patent No. 6,169,486 to Berkan et al. ("Berkan '486) and U.S. Patent No. 6,140,617 to Berkan et al. ("Berkan '617"). Claims 24, 39 and 40 were rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,864,463 to Ikeda. Claim 28 was rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,462,316 to Berkan et al. ("Berkan '316). Claims 37 and 41-43 were rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,118,107 to Kobrich. Claim 44 was rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,225,607 to Has et al. ("Has"). Claims 35 and 36 are objected to, but indicated as including allowable subject matter.

The listing of the claims is for the Examiner's convenience. No amendments have been made. Reconsideration of the application in view of the following remarks is respectfully requested.

Oath/Declaration

The oath/declaration has been indicated as being defective for failing to include the signature of each inventor. It is respectfully submitted that all inventors have signed the declaration submitted on July 14, 2006 upon entry into the U.S. national phase. A copy of the executed declaration is included herewith for the Examiner's convenience.

Status of the Drawings

The Office Action indicates that drawings are required under 37 CR 1.81(c). It is respectfully submitted that the present application is the National Stage of PCT/EP2005/000122 filed January 10, 2005. It is respectfully submitted that PCT/EP2005/000122 includes drawings, and therefore, the present application also includes these drawings. For convenience, a copy of the drawings of PCT/EP2005/000122 is provided herewith.

Allowable Subject Matter

Applicants thank the Examiner for the indication that claims 35 and 36 include allowable subject matter.

Rejections Under 35 U.S.C. § 103

Claims 21-23, 25-27, 29-34 and 38 were rejected under 35 U.S.C. § 103(a) based on a combination of U.S. Patent No. 6,169,486 to Berkan et al. ("Berkan '486") and U.S. Patent No. 6,140,617 to Berkan et al. ("Berkan '617"). Claims 24, 39 and 40 were rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,864,463 to Ikeda. Claim 28 was rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,462,316 to Berkan et al. ("Berkan '316"). Claims 37 and 41-43 were rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,118,107 to Kobrich. Claim 44 was rejected under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and U.S. Patent No. 6,225,607 to Has et al. ("Has").

Berkan '486 describes the use of two detectors including filters to limit their respective sensitivities to wavelength ranges corresponding to radiation emitted from a top surface of a glass ceramic and radiation emitted from a bottom surface of the glass ceramic, respectively. See Berkan '486, column 7, lines 57-65. The output of the detectors is used to calculate the heat flux through the glass ceramic. See Berkan '486, column 7, line 66 to column 8, line 7. Berkan '486 states that the filters are chosen to filter out reflective components and to avoid interference from other sources of radiation. See Berkan '486, column 3, lines 4-6.

Berkan '617 describes a cooktop that uses an optical detector 30 that collects optical radiation reflected from a cooking utensil 14. See Berkan '617, column 3, lines 34-37. A processor performs an optical interrogation to determine the type and size of cooking utensil based on the characteristics of the reflected radiation in comparison to stored values. See Berkan '617, column 2, lines 15-25.

Ikeda describes a method of producing a semiconductor apparatus that includes controlling the heating of a substrate based on the emissivity of the substrate. See Ikeda, column 1, lines 51-67.

Berkan '316 describes a system for automatically controlling a cooking surface of a cooktop. See Berkan '316, Abstract.

Kobrich describes a process that includes irradiation of a glass ceramic plate from an inside toward an outside with light, reflecting the light at the outside surface and detecting the light with a photocell. See Kobrich, Abstract.

Has describes a cooktop in which the transmittance of the material in a region of a measuring spot is low. See Has, Abstract.

Independent claim 21 of the present application recites a method using first and second heat sensor units and includes "measuring, by the second heat sensor unit, a second heat flow emanating downward, in the area of the first cooking zone, downward substantially from the cooktop plate and a cooking utensil disposed thereon," "calculating, by an electrical control system, a comparison value from respective output signals of the first and second heat sensor units," and "comparing, by the electrical control system, the calculated comparison value with at least one predetermined and stored reference value."

It is respectfully submitted that none of the cited references teach or suggest calculating a comparison value from the output signals of two heat sensor units, in which the first heat sensor unit measures heat emanating from a cooktop plate and the second heat sensor unit measures heat emanating from a cooktop plate and a utensil disposed thereon, as recited in claim 21. In contrast, Berkan '486 describes the use of two detectors that measure radiation emitted from a top surface of a glass ceramic and radiation emitted from a bottom surface of the glass ceramic, respectively, in order to the heat flux through the glass ceramic. See Berkan '486, column 7, line 57 to column 8, line 7. In fact, Berkan '486 states that filters corresponding to the detectors are chosen to filter out reflective components and to avoid interference from other sources of radiation. See Berkan '486, column 3, lines 4-6. Thus, Berkan '486 teaches away from the use of a heat sensor measuring the radiation emitted from a cooktop plate and a utensil disposed thereon. Moreover, there is no indication in Berkan '486 that measuring heat radiating from the cooktop plate and the utensil disposed thereon would offer any advantage or that a comparison value of the output of such a heat sensor with the output of a heat sensor measuring heat emanating from the cooktop plate would be

useful. Accordingly, a person of ordinary skill in the art would have had no reason in view of Berkan '486 to calculate a comparison value such as that which is recited in claim 21. The other cited references also fail to teach or suggest the calculation of such a comparison value. Therefore, it is respectfully submitted that this feature would not have been obvious in view of any combination of the cited references.

It is also respectfully submitted that none of the cited references teach or suggest comparing a calculated comparison value with at least one predetermined and stored reference value, as recited in claim 21. The Office Action acknowledges that Berkan '486 does not teach or suggest this feature. See Detailed Action, section 5, second paragraph. With respect to Berkan '617, that reference merely describes performing an optical interrogation to determine the type and size of a cooking utensil based on the characteristics of the reflected radiation in comparison to stored values. See Berkan '617, column 2, lines 15-25. Nowhere does Berkan '617 teach or suggest comparing a comparison value of the output of two heat sensor units to a stored value. Nor does Berkan '617, or any of the other cited references, indicate any reason why a comparison value from two heat sensor units, as recited in claim 21, would be beneficial for determining a type and size of a cooking utensil, as is the intended purpose of Berkan '617. Thus, there would have been no reason for a person of ordinary skill in the art to modify the process of Berkan '617 to compare a comparison value to stored values, instead of comparing the described reflected radiation characteristics to stored values. The other cited references of Ikeda, Berkan '316, Kobrich and Has do not cure the deficiencies of Berkan '486 and Berkan '617 with respect to claim 21. Therefore, any combination of these references, to the extent proper, could not render claim 21 or its dependent claims 22-24 obvious.

Independent claims 25 and 44 of the present application each recite a first heat sensor unit, "a second heat sensor unit disposed beneath the cooktop plate and configured to measure a heat flow emanating downward substantially from the cooktop plate and the cooking utensil" and "an electrical control system including a processing unit and a memory, the processing unit being configured to generate a comparison value from respective output signals of the first and second heat sensor units, the electrical control system being configured to control a heat output of the

heating device as a function of a comparison of the comparison value with at least one predetermined reference value stored in the memory.”

It is respectfully submitted that none of the cited references teach or suggest a second heat sensor unit configured to measure a heat flow emanating downward substantially from the cooktop plate and the cooking utensil, as recited in independent claims 25 and 44. In contrast, Berkan ‘486 describes the use of two detectors that measure radiation emitted from a top surface of a glass ceramic and radiation emitted from a bottom surface of the glass ceramic, respectively, in order to the heat flux through the glass ceramic. See Berkan ‘486, column 7, line 57 to column 8, line 7. In fact, Berkan ‘486 states that filters corresponding to the detectors are chosen to filter out reflective components and to avoid interference from other sources of radiation. See Berkan ‘486, column 3, lines 4-6. Thus, Berkan ‘486 teaches away from the use of a heat sensor measuring the radiation emitted from a cooktop plate and a utensil disposed thereon. The other references also fail to teach or suggest this feature. Accordingly, any combination of the cited references, to the extent proper, would not include the recited second heat sensor unit configured to measure a heat flow emanating downward substantially from the cooktop plate and the cooking utensil, as recited in independent claims 25 and 44.

Moreover, none of the cited references teach or suggest a processing unit “configured to generate a comparison value from respective output signals of the first and second heat sensor units,” or “configured to control a heat output of the heating device as a function of a comparison of the comparison value with at least one predetermined reference value stored in the memory.” As set forth above, none of the cited references teach or suggest a heat sensor unit that measures heat flow emanating from a cooktop plate and a cooking utensil. Accordingly, it would not have been obvious in view of any of the cited references to include a processing unit configured to generate a comparison value based on output signals of two heat sensor units, one of which measures heat flow emanating from a cooktop plate and a cooking utensil. Furthermore, because such a comparison value would not have been obvious in view of the cited references, it also would not have been obvious to control a heat output of a heating device as a function of a comparison of the recited comparison value with a predetermined reference value, as recited in claims 25 and 44.

Indeed, it would not have been obvious in view of the cited references to include a processing unit that controls heat output as a function of any comparison of a comparison value with a predetermined reference value at all. None of the cited references teach or suggest a processing unit that controls heat output based on a comparison of a comparison value with a predetermined reference value. The Office Action acknowledges that Berkan '486 does not teach or suggest this feature. See Detailed Action, section 5, second paragraph. With respect to Berkan '617, that reference merely describes performing an optical interrogation to determine the type and size of a cooking utensil based on the characteristics of a reflected radiation in comparison to stored values. See Berkan '617, column 2, lines 15-25. Nowhere does Berkan '617 teach or suggest comparing a comparison value of the output of two heat sensor units to a stored value. Nor does Berkan '617, or any of the other cited references, indicate any reason why a comparison value from two heat sensor units, as recited in claims 25 and 44, would be beneficial for determining a type and size of a cooking utensil, as is the intended purpose of Berkan '617. Thus, there would have been no reason for a person of ordinary skill in the art to modify the system of Berkan '617 to compare a comparison value to stored values, instead of comparing the described reflected radiation characteristics to stored values. The other cited references of Ikeda, Berkan '316, Kobrich and Has do not cure the deficiencies of Berkan '486 and Berkan '617 with respect to claims 25 and 44. Therefore, any combination of these references, to the extent proper, could not render independent claim 25 or its dependent claims 26-43 or independent claim 44 obvious.

Reconsideration and withdrawal of the rejection of claims 21-23, 25-27, 29-34 and 38 under 35 U.S.C. § 103(a) based on a combination of Berkan '486 and Berkan '617, claims 24, 39 and 40 under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and Ikeda, claim 28 under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and Berkan '316, claims 37 and 41-43 under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and Kobrich and claim 44 under 35 U.S.C. § 103(a) based on a combination of Berkan '486, Berkan '617 and Has is respectfully requested.

CONCLUSION

In view of the above amendment, applicants believe the pending application is in condition for allowance.

The Commissioner is hereby authorized to charge any unpaid fees deemed required in connection with this submission, including any additional filing or application processing fees required under 37 C.F.R. §1.16 or 1.17, or to credit any overpayment, to Deposit Account No. 04-0100.

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Respectfully submitted,

By 

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Attachments: Copy of the original drawings – Six (6) pages
Copy of the original Declaration – Eight (8) pages